BUREAU OF LAND MANAGEMENT
ELY DISTRICT
INTEGRATED NOXIOUS AND INVASIVE WEED MANAGEMENT
PROGRAMMATIC ENVIRONMENTAL ASSESSMENT

NV-040-00-017

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April, 2000

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BACKGROUND INFORMATION

The Ely District has been the site of dramatic expansion of several species of noxious and invasive weeds in the last ten years. This expansion has taken two forms. The first form of noxious and invasive weed expansion has been with species already present in the district that have aggressively been spreading in both disturbed and non-disturbed areas (i.e., Spotted Knapweed). The other form of weed expansion has been from new species arriving from neighboring regions (i.e., Leafy spurge). Throughout the past several years, general awareness of the threats these species pose to both ecosystem health and economic well being has steadily risen. This concern resulted in several inquiries by private landowners and local government entities regarding the Bureau of Land Management's (BLM) policies and capabilities initiating control measures on known noxious and invasive weed infestations. At the same time, all three counties (White Pine, Nye, and Lincoln) located in the Ely District have finalized resolutions and accompanying ordinances establishing weed control districts.

Noxious and invasive weed management in the BLM is guided by the January, 1996 Partners Against Weeds Action Plan (PAWS plan). This action plan identified seven goals for noxious and invasive weed control:

1. Prevention and Detection
2. Education and Awareness
3. Inventory
4. Planning
5. Integrated Weed Management
6. Coordination
7. Monitoring, Evaluation, Research and Technology Transfer

Goals 1 and 2 have been incorporated into the Ely Districts' day to day activities through training, and adoption of noxious and invasive weed prevention schedules for discretionary actions. Goal 3 is ongoing and will continue with approximately 500,000 acres having been inventoried as of January, 2000. Goal 4 is a continuing process, including this document, and will proceed as a part of normal program development. Goal 6 is being defined currently, and relationships with partners and cooperators are rapidly evolving. Goal 7 has not been implemented to date due to the fledgling nature of the program in the Ely District. This document will summarize and analyze procedures which will be used to accomplish Goal 5 of the BLM PAWS plan.

In addition, the 1997 Nevada Weed Management Strategy Plan identifies four weed management measures: prevention, detection, treatment, and site restoration. As with the PAWS plan, prevention and detection are incorporated into on-going activities. The treatment of weeds and short and long term treatment goals were identified in the plan. Site restoration activities would be contemplated as a separate action, and appropriate environmental analysis would be conducted.

Short term goals of the 1997 Nevada Weed Management Strategy Plan included "evaluation of the NEPA process to streamline treatment activities", while long term goals included "minimize the spread of large infestations" and "assign top priority to eradication of small infestations that are susceptible to mechanical and chemical treatments" .

Need for the Proposal

The development of the PAWS plan and the subsequent Nevada plan and its goals coupled with the increasing levels of public awareness and concerns has led to the development of the proposed action and defines the need of the proposal.

In order to meet this need, a programmatic environmental assessment (EA) is necessary to analyze the impacts of initiating district-wide noxious and invasive weed control measures within the boundaries of the Ely District.

Relationship to Planning

The 1991 Record of Decision and Final Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States (FEIS) requires that site-specific documentation be prepared at the Field Office level for each proposed vegetation control plan. This would be accomplished by using a site-specific environmental analysis. This "Ely District Integrated Weed Management Programmatic EA" is for noxious and invasive weed management on BLM administered lands in east-central Nevada. Goal 5 of the 1996 PAWS plan, indicated that the BLM would conduct integrated weed management on BLM lands using the best combinations of the four integrated weed control methods (cultural, physical, biological and herbicide).

The Egan Resource Area Resource Management Plan (RMP) and the Schell and Caliente Resource Area Management Framework Plans (MFP) are silent on weed management. However, the proposed actions and alternatives are consistent with the objectives of the RMPs and MFPs, and are consistent with federal, State and local laws, regulations, and plans to the maximum extent possible. The County land use plans are equally silent on noxious and invasive weeds, but control of these weeds to prevent resource damage is supportive of the plan objectives.

State authority for control of noxious and invasive weeds in Nevada is derived from Chapter 555 Nevada Revised Statutes. Federal authority for management of noxious and invasive weeds is found in the Federal Land Management Act of 1976 as amended, the Public Rangelands Improvement Act of 1978, 40 CFR part 152, and Departmental Manual 517. Other groups currently implementing weed control measures include local conservation districts, Nevada Department of Transportation, U.S. Department of Agriculture, U.S. Forest Service, U. S. Fish & Wildlife Service, Nevada Division of Agriculture, and several private land owners.

Major Issues

The following major issues have been identified through interdisciplinary review, and through the public scoping process in both the Wilson Creek vegetation treatment project and the 1997 weed management public scoping meeting:

> Possible pollution of air and ground water resources by chemical residues derived from herbicide use applications.

Potential conflicts with weed management in Native American traditional food and medicinal plant gathering areas.

Impacts of weed control on visual resources.

Potential impacts on recreationists as a result of chemical herbicide use in high use recreation areas.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVE(S)

Proposed Action

The proposed action is to implement an integrated weed management program to control scattered noxious and invasive weed infestations within the approximately 12 million acres of public land administered by the Ely Field Office consistent with the 1996 BLM PAWS plan. Integrated weed management, for the purposes of this document may be defined as the systematic and coordinated implementation of noxious and invasive weed control measures utilizing any one or a combination of the following treatment methods: mechanical, manual, chemical, cultural, and/or biological controls.

Mechanical control methods would include various tillage treatments. Manual control methods are those conducted without the aid of machinery and are usually associated with small infestations or areas where other methods of control would not be appropriate.

Chemical control methods would utilize approved pesticides applied in accordance with their respective labels.

All applications of restricted and/or non-restricted use pesticides will be conducted only by certified pesticide applicators or by personnel under the direct supervision of a certified applicator.

Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures. Strict conformance with the identified standard operating procedures would minimize the potential for these impacts. Should a chemical spill occur, the Ely district has developed a Hazardous Substance Contingency Plan for the Ely District. This plan identifies a process for responding to spills and measures to be taken which are designed to ensure quick response and minimum impacts to the environment.

Initiation of a chemical herbicide application will be implemented only after alternative control measures have been adequately evaluated and it is determined that chemical control would be the most effective and economical method to achieve and invasive weed management objectives.

All pesticides will be stored in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to the chemicals.

Mixing of herbicides and rinsing of herbicide containers and spray equipment will be conducted only

in areas which are adequately ventilated and which are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes or wells).

Chemical application will not be conducted when rain is expected within 24 hours or within the period of time specified by the chemical label.

Liquid herbicide application will not be conducted when winds exceed 3 mph for ground application, and 6 mph for aerial application.

Granular herbicides will not be applied when winds exceed 15 mph unless otherwise specified on the label.

Only tank mix formulations identified on the label or formulations not specifically prohibited by the label, but which have passed the jar test, will be utilized.

Nozzle type, nozzle size, boom pressure, and adjuvants use will be considered and appropriate measures taken for each herbicide application project to reduce chance of chemical drift.

Inspection, calibration and testing of all chemical application equipment will be conducted prior to beginning any project and on a weekly basis thereafter during the project. Testing will include filling the tank with water, charging all lines and pumps, and observing for leakage or signs of wear.

Unless specified on the label, the following minimum buffer strips will be implemented with any non-water labeled pesticide being applied in proximity to springs, seeps, creeks, stock water troughs or irrigation ditches:

Aerial spraying	100 feet
Vehicular spraying	25 feet
Hand spraying	10 feet

Where spot application occurs closer than 10 feet from the water source, application will be conducted by orienting the spray nozzle with the applicators back to the water source to minimize drift.

Application of pesticides within 440 feet (1/4 mile) of residences will not be made without prior notification to resident.

No application of herbicides will be directly over livestock.

Follow safe re-entry recommendations provided on the label for human and livestock re-entry to a spray site following application.

Application nozzles on aerial spray equipment will be outfitted with automatic shut-off devices to prevent loss of chemical along non-spray routes.

Spray areas and access points to spray areas will be adequately posted to inform the public of the activity and designate safe re-entry times. Posting will consist warning signs no smaller than eleven by seventeen inches and will contain date and time of spraying, and date and time of safe re-entry at a minimum.

Cultural control in this proposal refers to the use of domestic livestock such as sheep or goats to accomplish weed control. Control goals would be similar to goals for prescribed fire treatments. Cultural controls would also be combined with other methods.

Biological control would involve the use of organisms such as; nematodes, insects, fungus, microorganisms such as viruses and bacterium, and other plants to directly compete with or prey upon noxious and invasive weeds. All weed control treatments would be in conformance with, and be evaluated against the proposed standard operating procedures found in Appendix B.

Noxious and invasive weed infestations vary in size from isolated spots consisting of a few plants to hundreds of acres. A noxious and invasive weed inventory of all land within the Ely District has not been completed, therefore all noxious and invasive weed locations are not known. This proposed action would cover the currently identified weed infestations, as well as those discovered in future inventories. Priority would be given for identified noxious and invasive weed species.

Weed control would be accomplished through use of both contracted and BLM workforces.

Appendix A contains a current list of noxious weed species identified by the state of Nevada, along with a listing of the recommended chemical formulations for herbicide control. Upon final approval, this document would be valid for a minimum of ten years. This document would be subject to modification as needed. The timing of the treatments would generally depend on the weather, the susceptibility of the targeted species to the various treatment control methods and the growth stage of the species. The number of treated acres would vary each year based on budget, weather, climate, and other constraints.

Alternatives

No Action

Under this alternative, no efforts would be made to control noxious and invasive weeds. This alternative does not implement a program of weed management, and would not achieve objectives for control of weed infestations. This alternative will not be discussed further.

DESCRIPTION OF THE AFFECTED ENVIRONMENT

Detailed descriptions of the affected environment can be found in the referenced Draft Egan RMP and the Schell and Caliente Resource Area MFP's. Site-specific descriptions are included as needed in the Environmental Consequences section of this EA to facilitate understanding of anticipated impacts.

ENVIRONMENTAL CONSEQUENCES

The following critical elements of the human environment would not be affected by the proposed action:

Air Quality
Floodplains, Wetlands, and Riparian Areas
Wilderness Values, Areas of Critical Environmental Concern
Environmental Justice
Wastes, hazardous and solid
Cultural, Paleontological, and Historical Resource Values
Wild and Scenic Rivers
Prime or Unique Farmlands

Visual Resource Management

For all control measures excluding manual control and spot chemical treatment, impacts to visual resources would vary from slight to moderate. Site-specific impacts would depend on the timing of the treatment, the type of treatment, the size of the project, and the condition of the native vegetation prior to treatment. Chemical and mechanical treatments would result in varying degrees of non-target vegetation kill and would generally result in longer-term impacts. For all treatment methods, impacts to visual resources would begin to disappear within one to two growing seasons as the treated area begins to refill with vegetation. In areas where large shrubs or trees are killed, the woody skeletons left behind would persist for several years, and a distinct difference between treated and untreated areas would remain. Visual impacts would be minimized as these native and/or seeded grasses refill the sites, and the area develops a more natural appearance.

Water Quality (Drinking/Ground)

The greatest risks to water quality include accidental chemical spills, accidental drift onto waterways during aerial application of chemicals, and sedimentation as a result of overland flow following mechanical treatments.

Native American Religious Concerns

Historic pinyon nut harvest areas and other plant gathering areas are important to Eastern Nevada Native American tribes. Implementation of weed control measures within these areas would require close coordination and communication with these tribes to minimize impacts. This coordination is incorporated into the proposed action through the standard operating procedures, and modification of projects such as through selection of control measures or through project timing, could reduce these impacts.

Noxious and Invasive Weeds

Prioritized weed treatments with site-specific methods to reduce impacts and costs would translate into more weed control. Large infestation areas would be controlled and their rates of spread reduced. Smaller infestations would be eradicated, and new species introductions would be rapidly addressed.

Livestock Grazing

Livestock grazing impacts would vary depending on the type of treatment used and the size of the area to be treated.

Recreation

The proposed action would benefit recreational areas infested with noxious and invasive weeds by improving accessibility.

Manual treatment methods would have no adverse impact on recreational areas.

Mechanical tillage disrupts the land surface exposing bare soil for a short time until re-vegetation is complete. Until re-vegetation occurs, there could be some impacts to recreation use in the immediate area of the treatment.

Chemical treatment could impact recreation use as areas could be restricted for periods of time before and after application for health and safety reasons.

Some recreation enthusiasts have expressed fears regarding the use of chemical pesticides citing pollution of air and ground water resources. Impacts to these individuals would be unavoidable and could result in their avoidance of the area for a long period following a treatment. These fears have been expressed for several years, and the federal herbicide registration program was established through passage of several laws to ensure approved herbicides are thoroughly researched.

The use of biological control treatment methods is not expected to have an impact on recreational use.

Vegetation

Impacts to vegetation, common to the Sagebrush Steppe Ecosystem, under this alternative have been discussed in detail in the following documents: the 1991 Record of Decision and Final Environmental Impact Statement for Vegetation Treatment on BLM Lands in Thirteen Western States, and the 1986 Final Environmental Impact Statement for Chemical Control of Rangeland Vegetation. No further analysis is needed. Varying degrees of non-target vegetation kill would occur depending on the treatment type selected and its timing.

Wildlife

Under the proposed action, impacts to wildlife would vary depending on the site. The treatments of noxious and invasive weeds by any means would most likely not impact wildlife. Chemical treatment would minimize wildlife impacts as fewer non-target species would be affected by the application. Mechanical treatments would displace wildlife for a period of time as habitat values are reduced, but these values would recover over time similar to a wildfire situation. Cultural and biological control measures would not be expected to impact wildlife.

Threatened, Endangered, Candidate, and Special Status Species

Under the proposed action, impacts to sensitive and listed species would be minimized by implementation of standard operating procedures. Appendix C summarizes the threatened and endangered species known to occur in the Ely District. If listed species are involved (threatened, endangered, candidate), consultation with the U.S. Fish and Wildlife Service would be initiated, and necessary take statements would be obtained

before initiation of the project.

Wild Horse and Burros

Under the proposed action, impacts to wild horses and burros would vary depending on the site. The treatments of noxious and invasive weeds by any means would most likely not impact wild horses and burros. Chemical treatment would minimize wildlife impacts as fewer non-target species would be affected by the application. Mechanical treatments would displace wild horses and burros for a period of time as habitat values are reduced, but these values would recover over time similar to a wildfire situation. Cultural and biological control measures would not be expected to impact wild horses and burros.

Cumulative Impacts

Cumulative impacts are the combined effects of the proposed action and other past, present and reasonably foreseeable future actions. The proposed action is to consolidate weed control efforts which have to date been initiated and developed as separate actions. Consolidation of these efforts would allow for a more focused approach to noxious and invasive weed control efforts in the future.

Historic livestock grazing use played a crucial role in most plant communities which has lead to the invasion by invasive species, such as cheatgrass.

The trend of increasing size and frequency of wildfires would increase site susceptibility in burn areas for invasion of noxious and invasive weeds. Introduction and spread of noxious and invasive species would occur through transportation of seed and plant parts on vehicles and equipment. Previously developed and continuing activities such as rights-of-way, mining, road maintenance, OHV use, etc., would continue to provide a vector for introduction and expansion of noxious and invasive weed species.

Implementation of the proposed actions would reduce the spread of noxious and invasive weeds.

PROPOSED MITIGATION MEASURES

Proposed mitigating measures have been incorporated into the proposed action. (See Appendix B Standard Operating Procedures.) No other mitigating measures are necessary.

SUGGESTED MONITORING

Monitoring techniques have been adopted for Nevada BLM and are identified in the 1984 Nevada Rangeland Monitoring Handbook. Specific monitoring techniques have been identified in the Standard operating procedures contained in Appendix B.

CONSULTATION AND COORDINATION

Intensity of Public Interest and Record of Contacts

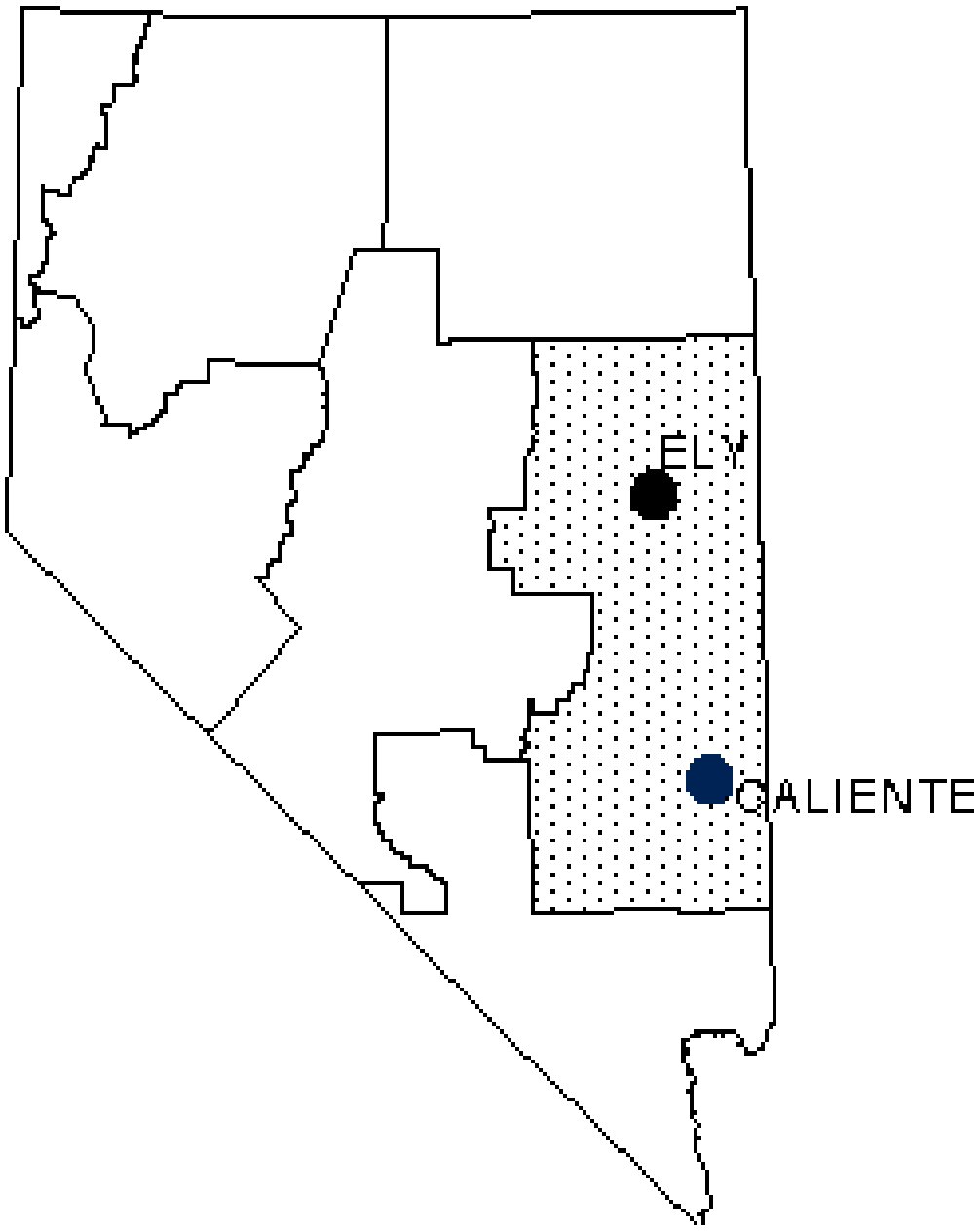
A public meeting was held in February, 1998 in which BLM policy direction regarding noxious and invasive weed management and Ely District weed management goals were discussed. Local interest groups including all permittees, local county and city governments, State Department of Transportation, mining companies, consulting firms, railroad companies, sportsman groups, and State Divisions of Wildlife and Forestry, were invited. Representatives from each interest group attended the meeting and provided comment into the BLM's plans. These comments have been addressed in this programmatic environmental assessment.

Internal District Review

Name	Title	Responsibility or Topic
Shane DeForest	Noxious Weed Program Lead	Noxious Weeds, Author
Harry Rhea	Forester	Forestry
Mark Barber	Riparian Team Lead	T/E, Fisheries
Mike Perkins	Wildlife Biologist	Wildlife
Bob Brown	Wild Horse Specialist	Wild Horses
Sue Howle	NEPA Coordinator	NEPA Compliance
Chris Mayer	Range Team Lead	Range Management

MAPS

ELY DISTRICT VICINITY MAP



APPENDICES

Appendix A. List of Nevada Noxious Weed Species, Their Potential Habitat and Recommended Treatments

Common Name (Scientific Name) *other names*	**Habitat** *	**Herbicide**
Austrian fieldcress (Rorippa austriaca) *Swainsonpea*	cultivated fields and waste areas near cultivated fields	2,4-D-see label for recommended rate on rangelands
Austrian peaweed (Sphaerophysa salsula)	cultivated fields and waste areas near cultivated fields	2,4-D ester at 2.0 lb.ae/A
Black henbane (Hyoscyamus niger)	rights-of-way and waste areas	Tordon at .25 to .5 lb ai/A Banvel at .125 to.375 lb ai/A
Camelthorn (Alhagi pseudalhagi) *Alhagi camelorum*	areas of high water tables such as saline meadows, playas, riparian areas and cropland	Escort at 1.0 oz. ai/A Tordon 22 K see label for recommended rate on rangelands
Canada thistle (Cirsium arvense)	cropland, riparian areas, pastures, rangelands, rights-of-way and other disturbed areas	Banvel at .25 to .5 pt. ai/A plus 2,4D at .23 to .5 lb. ae/A. Tordon at 1 to 2 pt. ai/A plus 2, 4D at 1 lb. ae/A. Curtail at 1 to 5 qts product/A Stinger at .13 to .19 ae/A Telar at 1.5 oz. ai/A Escort at .6 oz. ai/A
Carolina Horsenettle ()Solanum carolinense)	old meadows, pastures, waste areas and cultivated cropland	2,4-D-see label for recommended rate on rangelands
Common crupina (Crupina vulgaris)	abandoned cropland, improved pasture, gravel pits, disturbed areas and rights-of-way	Tordon at .5 lb ai/A Banvel at .5 to .75 lb ai/A Tordon at .5 lb ai/A plus 2,4-D at 1.0 lb ai/A. Banvel at .5 to 1.0 lb ai/A plus 2,4-D at .75 to 1.0 lb. ai/A
Common St. Johnswort (Hypericum perforatum) *Goatweed; klamathweed*	old meadow, pastures, rights-of-way and waste areas. Prefers dry, sandy, gravely soils	2,4-D at 2.0 lb ae/A in 50 gal of water Escort at .6 oz ai/A Tordon at 1 to 2 pt. ai/A

Common Name (Scientific Name) *other names*	**Habitat** *	**Herbicide**
Dalmation toadflax (Linaria genistifolia ssp. dalmatica)	drier, open areas on rangeland, rights-of-way, and other disturbed sites. Prefers gravelly soils	Banvel at 4-6 lb. ae/A Tordon at 1.5 lb ae/A Tordon at .5 lb ae/A plus 2,4D at 1.5 lb ae/A . Telar at .75 oz. ai/A
Diffuse knapweed (Centaurea diffusa)	pastures, riparian areas, rights-of-way and disturbed areas	Roundup at 3.0 lb ae/A Tordon at .25 to .5 lb ae/A 2,4-D at 1.0 to 2.0 lb ae/A Curtail at 2 to 5 qts. product/A Stinger at .5 lb ae/A
Dyer's woad (Isatis tinctoria)	pastureland, rangeland and waste areas	2,4D at 2 to 2.5 lb ae/A Telar at .75 oz. ai/A Escort at .3 to .6 oz. ai/A
Hoary cress (Cardaria draba) *whitetop*	disturbed areas and in croplands, rangelands and riparian areas. Prefers alkaline soils	Banvel at .25 to .5 pt/A plus 2,4D at .25 to .5 ae/A Escort at .3 to .6 oz. ai/A Telar at .37 to .75 oz. ai/A 2,4D at 2 to 3 lb ae/A Amitrole at 3.0 lb ai per 50 gallons of water
Houndstongue (Cynoglossum officinale)	disturbed areas such as rights-of-way, rangeland and abandoned cropland	2,4D at 2.0 lb ae/A Escort at .75oz. product/A Tordon at .5lb. ae/A
Iberian starthistle (Centaurea iberica)	arid and semiarid rangeland, abandoned cropland and waste areas	2,4-D ester at 1.0 lb ae/A in 50 gallons of water. Tordon at .25 to .375 lb ae/A Telar at .75 to 2.25 oz ai/A
Johnsongrass (Sorghum halepense) *perennial sorghum*	pastures, cultivated cropland, meadows and waste areas	Roundup at 2.25 lb ae/A Oust at 4.5 to 9.0 oz. ai/A
Leafy spurge (Euphorbia esula)	floodplains and streambanks to rangelands, croplands and disturbed areas	Tordon at 1 pt/A plus 2,4D at 1 qt/A Banvel at 4.0 to 8.0 lb ae/A Amitrole at 8.0 lb ai/A

Common Name (Scientific Name) *other names*	**Habitat** *	**Herbicide**
Mediterranean sage (Salvia aethiopis)	pastures, meadows, rangeland and other open disturbed areas	No data available see Biological Control
Medusahead (Taeniatherum caput-medusae) *medusahead rye*	sparsely vegetated rangeland degraded to low seral stage. Prefers soils with a high clay content	Roundup at 1 pt./A Pro at 1 qt. product/A
Musk thistle (Carduus nutans)	cropland and rangeland, rights-of-way, riparian areas and meadows	Banvel at .5 to 1.0 lb ae/A Tordon at .25 lb ae/A Telar at .75 oz ai/A Escort at .3 to .6 oz. ai/A 2,4D at 1.5 to 2.0 lb ae/A
Perennial pepperweed (Lepidium latifolium) *Tall whitetop*	waste areas, riparian areas, roadsides, rangeland and cropland	2,4D at 4.0 lb. ae/A in combination with burning or mowing Escort at .6 oz. ai/A Telar at .75 oz. ai/A
Perennial sowthistle (Sonchus arvensis)	cultivated fields, pastures, wastelands, and prefers poorly drained, fine-textures soils	2,4D at 2.0 lb. ae/A Banvel at 1 qt ae/A Roundup at 4 qt ai/A Banvel at 5 pt. ae/A plus 2,4-D at 1 pt ae/A Amitrole at 4.0 lb ai/A Curtail at 1 to 5 qts product/A
Poison Hemlock (Conium maculatum)	borders of pastures and cropland and tolerates poorly drained soils and would occur in riparian areas	Weedar 638 at 1.5 qt./A Escort at .75 oz ai/A Telar at 1.0 oz ai/A
Punctureviney (Tribulus terrestris)	disturbed areas, right-of-ways, and disturbed dry rangelands	2,4D at 2.0 lb. ai/A in 10 -20 gallons of water. Atrazine at 8.0 lb product/A plus Amitrole at 2.0 lb product/A. Paraquat at .38 to .47 lb ai/A Telar at 1.5 oz ai/A
Purple loosestrife (Lythrum salicaria) *purple lythrum*	wetlands, flood plains, drainage ditches and in riparian areas	Glyphosate at 1% solution with hand held equipment. Rodeo at 4-6 pts ae/A Triclopyr at 1.5 to 2.0% solution

Common Name (Scientific Name) *other names*	**Habitat** *	**Herbicide**
Purple starthistle (Centaurea calcitrapa)	waste areas, rights-of-way, and pastureland	Banvel at 1 to 2 lb. ae/A Tordon at .25 to .5 lb ae/A 2,4 D at 1 to 2 lb ae/A Curtail at 2 to 5 qts product/A Stinger at .25 to .5 lb ae/A
Rush skeletonweed (Chondrilla juncea)	rngeland, cropland, rights-of-way, waste areas and prefers thin rocky soils or gravelly to sandy soils	Tordon at .25 pt/A plus 2,4D at 1 pt/A. Banvel at 1 to 2 qts/A plus 2,4D at 1 to 2 qts/A. Tordon at 1.0 lb ae/A 2,4-D or MCPA at 2.0 lb ae/A
Russian knapweed (Centaurea repens)	cropland, rangeland, riparian and waste areas	Tordon at 1 to 1.5 lb ae/A 2,4-D at 4.0 to 8.0 lb ae/A Roundup at 3.0 lb ae/A Telar at 1 to 3 oz. product/A
Saltcedar (Tamarix ramosissima) *tamarisk*	along streams, canals and reservoirs, floodplains and riparian areas	Arsenal at 4 to 6 pt product/A Rodeo at 4 to 6 pt product/A Garlon 4 at 5% volume
Scotch thistle (Onapordum acanthium)	waste areas, rights-of-way, pastureland, rangeland and riparian areas	Banvel at .5 to 1 lb/A Tordon at .25 lb ae/A Telar at .75 oz. ai/A Escort at .3 to .6 oz. ai/A 2,4-D at 1.5 to 2.0 lb ae/A
Silverleaf nightshade (Solanum elaeagnifolium) *White horsenettle*	meadows, pastures, and cultivated fields	Arsenal at 1 lb ae/A 2,4-D see label for rangelands
Spotted knapweed (Centaurea maculosa)	pastures, rangeland, disturbed areas and a variety of habitats	Roundup at 3.0 lb ae/A Tordon at .25 to .5 lb ae/A 2,4-D at 1.0 to 2.0 lb ae/A Curtail at 2 to 5 qts/A Stinger at .5 lb ae/A

Common Name (Scientific Name) *other names*	**Habitat** *	**Herbicide**
Squarrose knapweed (Centaurea virgata ssp. Squarrosa)	pastures, rangeland, disturbed areas and a variety of habitats	Tordon at .25 lb ae/A plus 2,4-D at 4 lb ae/A Roundup at 3.0 lb ae/A Tordon at .25 to .5 lb ae/A 2,4-D at 1.0 to 2.0 lb ae/A Curtail at 2 to 5 qts/A Stinger at .5 lb ae/A
Sulfur cinquefoil (Potentilla recta)	mesic and xeric disturbed sites such as rights-of-ways, abandoned croplands, and waste areas	Tordon or Banvel at 1 pt/A plus 2,4-D at 1-2 qts/A
Yellow starthistle (Centaurea solstitialis)	arid and semiarid rangeland and abandoned cropland. Prefers shallow, gravely soils	2,4-D ester at 1.0 lb ae/A in 50 gallons of water. Tordon at .25 to .375 lb ae/A Telar at .75 to 2.25 oz ai/A Curtail at 1 to 5 qts product/A Stinger at .375 lb ae/A
Yellow toadflax (Linaria vulgaris) *Butter and Eggs*	disturbed areas on rangelands, rights-of-way and on disturbed soils	Banvel at 4.0 to 6.0 lb ae/A Tordon at 1.5 lb ae/A Tordon at .5 ae/A plus 2,4-D at 1.5 lb ae/A. Telar at .75 oz. ai/A
Waterhemlock (Cicuta ssp)	old meadows, waste areas, floodplains	2,4-D or MCPA at 2.0 lb ae/A
Western waterhemlock (Cicuta douglasii)	old meadows, waste areas, floodplains	2,4-D or MCPA at 2.0 lb ae/A
Wild licorice (Glycyrrhiza lepidota) *American licorice*	mesic sandy soils of meadows, pastures, rangeland, riparian areas and waste areas	Tordon at 1 qt. product/A Banvel at 2 qt. product/A

* Habitats for listed weed species are not inclusive.
Bold/italics/underlined weed names with shaded rows: known to occur in Ely District as of 2000
Dark Box shading, white type for species box:: known to occur in areas immediately adjacent to Ely District, high probability of detection with continued inventory.

APPENDIX B: STANDARD OPERATING PROCEDURES

Chemical Control

All applications of restricted and/or non-restricted use pesticides will be conducted only by certified pesticide applicators or by personnel under the direct supervision of a certified applicator.

Prior to commencing any chemical control program, and on a daily basis for the duration of the project, the certified applicator will provide a suitable safety briefing to all personnel working with or in the vicinity of the herbicide application. This briefing will include safe handling, spill prevention, cleanup, and first aid procedures.

Initiation of a chemical herbicide application will be implemented only after alternative control measures have been adequately evaluated and it is determined that chemical control would be the most effective and economical method to achieve noxious and invasive weed management objectives.

All pesticides will be stored in areas where access can be controlled to prevent unauthorized/untrained people from gaining access to the chemicals.

Mixing of herbicides and rinsing of herbicide containers and spray equipment will be conducted only in areas which are adequately ventilated and which are a safe distance from environmentally sensitive areas and points of entry to bodies of water (storm drains, irrigation ditches, streams, lakes or wells).

Chemical application will not be conducted when rain is expected within 24 hours or within the period of time specified by the chemical label.

Liquid herbicide application will not be conducted when winds exceed 3 mph for ground application, and 6 mph for aerial application.

Granular herbicides will not be applied when winds exceed 15 mph unless otherwise specified on the label.

Only tank mix formulations identified on the label or formulations not specifically prohibited by the label, but which have passed the jar test, will be utilized.

Nozzle type, nozzle size, boom pressure, and adjuvants use will be considered and appropriate measures taken for each herbicide application project to reduce chance of chemical drift.

Inspection, calibration and testing of all chemical application equipment will be conducted prior to beginning any project and on a weekly basis thereafter during the project. Testing will include filling the tank with water, charging all lines and pumps, and observing for leakage or signs of wear.

Unless specified on the label, the following minimum buffer strips will be implemented with any non-water labeled pesticide being applied in proximity to springs, seeps, creeks, stock water troughs or irrigation ditches:

Aerial spraying	100 feet
Vehicular spraying	25 feet
Hand spraying	10 feet

Where spot application occurs closer than 10 feet from the water source, application will be conducted by orienting the spray nozzle with the applicators back to the water source to minimize drift.

Application of pesticides within 440 feet (1/4 mile) of residences will not be made without prior notification to resident.

No application of herbicides will be directly over livestock.

Follow safe re-entry recommendations provided on the label for human and livestock re-entry to a spray site following application.

Application nozzles on aerial spray equipment will be outfitted with automatic shut-off devices to prevent loss of chemical along non-spray routes.

Spray areas and access points to spray areas will be adequately posted to inform the public of the activity and designate safe re-entry times. Posting will consist warning signs no smaller than eleven by seventeen inches and will contain date and time of spraying, and date and time of safe re-entry at a minimum.

Biological Control

Only certified and approved biological control organisms will be used to control noxious and invasive weeds.

Prior to initiating a biological control program in an area, a survey of the site will be conducted to determine if any of the identified release organism(s) are already present.

Biological control areas will be clearly marked and location and management issues will be fully communicated to all local weed control personnel to prevent application of other weed management measures in the area.

Prior to initiating any biological control treatment, weed control personnel and the public will be adequately informed of the objectives, expectations, and potential for a biological control treatment. Clear communication of what results would constitute "successful treatment" will be assured to prevent false expectations.

The Nevada Department of Agriculture state entomologist and/or quarantine officer will be notified prior to any release of biological control organisms, and appropriate approvals will be obtained.

Cultural Control

Cultural control devices (sheep and goats) which are used to manage noxious and invasive weeds will only be introduced into a grazing allotment after approval of the permittee of record.

Sheep and goats will be under full time supervision during the application of the weed control treatment to guide use and ensure minimum off target effects.

Weed utilization will be carefully monitored throughout the treatment to minimize damage to non-target native species if a dietary shift occurs.

Adequate water will be in place prior to initiating any sheep or goat treatment.

General

Noxious and invasive weed control projects will incorporate minimal effectiveness monitoring procedures to enable a determination of treatment success and to accumulate information regarding best treatment practices for various weed species in the Ely District.

Control of noxious and invasive weeds would not be conducted within 1/4 mile of active sage grouse leks during the strutting season, or within 1/4 mile of known nesting and brood rearing areas during the nesting season.

Noxious and invasive weed control will not be conducted within 1/2 mile of nesting areas for sensitive species during the nesting season.

Native American religions concerns will be solicited, and these concerns considered and mitigated wherever possible prior to implementation of any noxious and invasive weed control effort.

When manual weed control is conducted within the floodplain of any perennial or intermittent streams, the cut weeds and weed parts will be removed from the floodplain and disposed of in a manner designed to prevent seeds and weed parts from entering into the water and being deposited downstream.

Where weed control treatments result in the formation of compacted areas, those areas will be scarified and re-seeded at the conclusion of the project or during a period within the same year when seed germination is maximized.

Weed control treatments will be scheduled for periods when livestock are not present in the pasture and when wild horse seasonal distribution will result in minimal horse presence during the application wherever possible.

Methods used to accomplish weed control objectives will consider seasonal distribution of large wildlife species.

Weed management in areas of threatened, endangered, candidate, and special status species will carefully consider the impacts of the treatment on the organism. Wherever possible, manual control or spot treatment using herbicides is preferred over less species specific methods.

Appendix C: Threatened, Endangered, Candidate and Special Status Species

Ia. FEDERALLY LISTED SPECIES

Scientific Name	Common Name	Status*
Spiranthes diluvialis	Ute lady's tresses; plateau l. t.	FT,SL
Crenichthys baileyi baileyi	White River springfish	FE, SL
Crenichthys baileyi grands	Hiko White River springfish	FE
Crenichthys nevadae	Railroad Valley springfish	FT,SL
Lepidomeda albivallis	White River spinedace	FE,SL
Empetrichthys latos	Pahrump poolfish; Pahrump killifish	FE,SL
Gila robusta jordani	Pahranagat roundtail chub	FE,SL
Gopherus agassizii	Desert tortoise	FT,SL
Lepidomeda mollispinis pratensis	Big Spring spinedace	FT,SL
Falco peregrinus	Peregrine Falcon	FT,SL
Haliaeetus leucocephalus	Bald Eagle	FT,SL
Empidonax traillii extimas	Southwest willow flycatcher	FE

Ib. FEDERALLY PROPOSED SPECIES

None

Ic. FEDERAL CANDIDATE SPECIES

Rana pretiosa	spotted frog	C

*Status

FE-Federally endangered
FT-Federally threatened
C-Candidate
SL-Listed by the State of Nevada in a category implying potential endangerment or extinction

IIa. NEVADA STATE PROTECTED ANIMALS THAT MEET BLM'S 6840 POLICY DEFINITION

Species of animals occurring on BLM-managed lands in Nevada that are: (1) "protected" under authority of NAC 501.100 - 503.104; (2) also have been determined to meet BLM's policy definition of "listing by a State in a category implying potential endangerment or extinction"; and (3) are not already included as BLM Special Status Species under federally listed, proposed, or candidate species. Nevada BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C.

Scientific Name	Common Name
Mammals	
Euderma maculatum	spotted bat
Birds	
Aquila chrysaetos	Golden Eagle
Accipiter gentilis	Goshawk
Buteo regalis	Ferruginous Hawk
Buteo swainsoni	Swainson's Hawk
Pandion haliaetus	Osprey
Pelecanus erythrorhynchos	White Pelican
*Plegadis chih*i	White-faced ibis
Speotyto cunicularia	Burrowing Owl
Fishes	
Catostomus clarkiintermedius	White River desert sucker
Catostomus clarki spp.	Meadow Valley Wash desert sucker
Crenichthys baileyi albivallis	Preston White River springfish
Gila bicolor newarkensis	Newark Valley tui chub
Gila bicolor ssp.	Big Smoky Valley tui chub
Gila bicolor ssp.	Fish Lake Valley tui chub
Gila bicolor ssp.	Railroad Valley tui chub
Relictus solitarius	relict dace
Rhinichthys osculus velfer	Pahranagat speckled dace
Reptiles	
Heloderma suspectum	Gila monster

IIb. NEVADA STATE PROTECTED PLANTS

Species of plants occurring on BLM-managed lands that are protected under authority of NRS 527.270 - .300 because of potential endangerment or extinction, but are not already included as BLM Special Status Species under Federally listed, proposed, or candidate species. Nevada BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C.

Scientific Name	Common Name
Castilleja salsuginosa	Monte Neva paintbrush
Frasera gypsicola	Sunnyside green gentian; S. elkweed

III. NEVADA BLM SENSITIVE SPECIES LIST

Species designated by the State Director, in cooperation with the State of Nevada Department of Conservation and Natural Resources, that are not already included as BLM Special Status Species under (1) Federally listed, proposed, or candidate species; or (2) State of Nevada listed species. BLM policy is to provide these species with the same level of protection as is provided for candidate species in BLM Manual 6840.06 C.

Scientific Name	Common Name
Mammals	
Idionycteris phyllotis (=*Plecotus p*.)	Allen's big-eared bat
Macrotus californicus	California leaf-nosed bat
Microtus montanus fucosus	Pahranagat Valley montane vole
Myotis ciliolabrum	small-footed myotis
Myotis evotis	long-eared myotis
Myotis thysanodes	fringed myotis
Myotis velifer	cave myotis
Myotis volans	long-legged myotis
Myotis yumanensis	Yuma myotis
Nyctinomops macrotis (=*Tadarida m., T. molossa*)	big free-tailed bat
Plecotus townsendii pallescens	pale Townsend's big-eared bat
Plecotus townsendii townsendii	Pacific Townsend's big-eared bat
Sorex preblei	Preble's shrew
Thomomys umbrinus abstrusus	Fish Spring pocket gopher
Thomomys umbrinus curtatus	San Antonio pocket gopher
Birds	
Chlidonias niger	Black Tern
Charadrius alexandrinus nivosus	Western Snowy Plover

BLM SENSITIVE SPECIES (CONTINUED)

Birds (continued)

Centrocercus urophasianus	Western Sage Grouse
Oreortyx pictus	Mountain quail
Phainopepla nitens	Phainopepla

Reptiles

Sauromalus obesus	Chuckwalla

Amphibians

Bufo microscaphus microscaphus	Arizona toad

Fishes (3 total)

Crenichthys baileyi thermophilus	Moorman White River springfish
Oncorhyncus mykiss gibbsi	interior redband trout
Rhinichthys osculus ssp.	Meadow Valley Wash speckled dace

Snails

Fluminicola merriami	Pahranagat pebblesnail
Oreohelix nevadensis	Schell Creek mountainsnail
Tryonia clathrata	grated tryonia

Clams & Mussels

None

True Bugs

Pelocoris shoshone shoshone	Pahranagat naucorid bug

Beetles

None

Butterflies & Moths

Cercyonis pegala ssp.	White River wood nymph
Euphilotes battoides ssp.	Baking Powder Flat blue
Phyciodes pascoensis ssp.	Steptoe Valley crescentspot

BLM SENSITIVE SPECIES (CONTINUED)

Plants

Asclepias eastwoodiana	Eastwood milkweed
Astragalus eurylobus	Needle Mountains milkvetch;
Astragalus funereus	black woollypod; Funeral milkvetch; black m.; Rhyolite m.
Astragalus oophorus var. *lonchocalyx*	long-calyx eggvetch; pink e.
Astragalus uncialis	Currant milkvetch
Cryptantha welshii	White River catseye; Welsh c.
Erigeron ovinus	sheep fleabane
Jamesia tetrapetala	waxflower
Penstemon concinnus	Tunne Springs beardtongue
Phacelia parishii	Parish phacelia; playa p.
Sclerocactus blainei	Blaine pincushion; B. fishhook cactus
Sclerocactus nyensis	Nye pincushion
Sclerocactus schlesseri	Schlesser pincushion; S. fishhook cactus
Silene nachlingerae	Jan's catchfly; Nachlinger catchfly
Sphaeralcea caespitosa	Jones globemallow